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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/568,390	10/13/2006	Laurent Labrousse	285948US0PCT	1129
22850 7590 09/25/2009 OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P. 1940 DUKE STREET ALEXANDRIA, VA 22314				
EXAMINER XU, LING X				
ART UNIT 1794		PAPER NUMBER		
NOTIFICATION DATE 09/25/2009		DELIVERY MODE ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com  
oblonpat@oblon.com  
jgardner@oblon.com

### Office Action Summary

**Application No.**

10/568,390

**Applicant(s)**

LABROUSSE ET AL.

**Examiner**

Ling Xu

**Art Unit**

1794

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 July 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-16 and 18-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 and 18-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_
- Paper No(s)/Mail Date \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 6-11, and 18-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Chesworth et al. (US 4,749,397).

Regarding claims 1-4 and 10-11, Chesworth discloses a coated glass substrate comprising a metal over and/or under the silver layer (col. 3, lines 45-55). The metal can be zirconium (abstract and col. 1, lines 1-10 and col. 2, lines 1-10). An antireflection layer of metal oxide such as ZnO may be deposited over the metal layer (col. 5, lines 10-20) and/or on the glass substrate before the silver layer (col. 5, lines 20-35).

Regarding claims 6-8, the thickness of the Zr layer is about 4-15 nm (col. 4, lines 45-60). The thickness of the Ag layer is about 5-20nm (col. 5, lines 1-20). The thickness of the ZnO layer is about 10-80nm (col. 5, lines 25-40).

Regarding claims 9 and 18-21, as stated above, since Chesworth discloses the coated glass substrate comprising the same layered structure as claimed, the same coated substrate would also have the same properties such as substantially retaining its properties, after a heat treatment at a temperature of at least 500°C.

2. Claims 1-2, 5-6, 8-11, and 18-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Arbab et al. (US 5,942,338).

Regarding claims 1-2, 5, and 10-11, Arbab discloses a multilayer high transmittance, a low emissivity coated article comprising a transparent glass substrate having an antireflective base layer such as zinc oxide, a metallic reflective layer such as silver (col. 6, lines 50-60), a primer layer such as zirconium (col. 7, lines 45-60), a MDE layer comprising zinc oxide, and a protective overcoat oxide layer (col. 9, lines 5-20).

Regarding claims 6 and 8, the thickness of the primer layer is about 0.8-1.2 or 2-3 nm (col. 8, lines 1-20). The thickness of the MDE layer is 20-50 nm (col. 4, lines 1-10).

Regarding claims 9 and 18-21, as stated above, since Arbab discloses the coated article comprising the same layered structure as claimed, the same coated article would also have the same properties such as substantially retaining its properties, after a heat treatment at a temperature of at least 500°C.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chesworth et al., as applied to claim 1 above, and further in view of Arbab et al.

As stated above, Chesworth discloses the same coated glass substrate as recited in claim 1.

Chesworth does not disclose a protective layer as recited in claim 5.

However, it is known in the art to use a protective layer over the coated glass substrate. For example, Arbab teaches that a protective overcoat oxide layer (col. 9, lines 5-20) can be formed on the coated glass substrate to provide significant protection and scratch resistance to the coated glass substrate (col. 2, lines 55-65).

Therefore, it would have been obvious to one of ordinary skill in the art to add a protective overcoat oxide layer on Chesworth's coated glass substrate in order to provide significant protection and scratch resistance to the coated glass substrate.

4. Claims 13-16 and 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chesworth et al., as applied to claims 1 and 11 above, and further in view of Coustet et al. (WO-2002/048065, its US equivalent, US 2005/0123772, is used as English translation).

As stated above, Chesworth discloses the same coated substrate as recited in claims 1 and 11. Regarding claims 13, Chesworth discloses that, If desired, a succession of two or more anti-reflection layers may be used under the silver layer.

Chesworth does not disclose the lower anti-reflection dielectric layer comprising the layer structure of Si<sub>3</sub>N<sub>4</sub>/ZnO as recited in claim 13.

Coustet teaches a lower dielectric layer structure of  $\text{Si}_3\text{N}_4/\text{ZnO}$  (page 2, [0029]) for a coated glass substrate. Coustet teaches that it is beneficial for the coatings to comprise both metal oxide layers such as ZnO layer for stabilizing the silver layer and silicon nitride layers for oxygen barrier (page 2, [0023]). The coated article comprising such layered structure is able to undergo a heat treatment of the bending or toughening type without any substantial optical change (page 1, [0005]).

Therefore, it would have been obvious to one of ordinary skill in the art to use the low dielectric layer structure as claimed for Chesworth's anti-reflection dielectric layer in order to stabilize the silver layer, provide oxygen barrier, and to maintain the optical properties of the coated glass substrate even after a heat treatment, bending or toughening.

Regarding claims 14-16, Chesworth discloses the coated glass is useful for architectural glazing and as vehicle windows to provide high light transmitting and low emissivity to the architecture or vehicle (cols 1-2).

Chesworth does not disclose the specific layered structure of the double glazing as recited in claims 14-16.

However, it is well known in the art that the architectural or vehicle windows comprising multiple or double glazing structure. For example, Coustet teaches a multiple or double glazing comprising an inert film between the two glass substrates (page 2, [0030]) and at least one of the glass substrate coated with a low emissivity coating that comprising silver.

Therefore, it would have been obvious to one of ordinary skill in the art to provide Chesworth's coated glass substrate in a double glazing structure as claimed in order to make the coated glass substrate suitable for architectural or vehicle windows.

5. Claims 3-4 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arbarb et al., as applied to claims 1-2 above, and further in view of Chesworth et al.

As stated above, Arbarb discloses the same coated substrate as recited in claims 1-2.

Arbarb does not disclose that coated substrate comprising the lower barrier layer as recited in claim 3-4 and the specific thickness of the silver layer as recited in claim 7.

Chesworth teaches a coated glass substrate comprising a layer of metal over and/or under the silver layer (col. 3, lines 45-55). The metal can be zirconium (abstract and col. 1, lines 1-10 and col. 2, lines 1-10). An antireflection layer of metal oxide such as ZnO may be deposited over the metal layer (col. 5, lines 10-20) and/or on the glass substrate before the silver layer (col. 5, lines 20-35). The thickness of the Ag layer is about 5-20nm (col. 5, lines 1-20). Accordingly, Chesworth discloses an layered structure including that the Zr layer can be either over and/or under the silver layer and the ZnO layer can be in direct contact with silver layer as recited in claims 3-4.

It would have been obvious to one of ordinary skill in the to provide a lower barrier layer under the silver layer instead of above the silver as desired since Chesworth teaches that the barrier layer can be either over and/or under the silver layer

and the results and results would have been reasonably predictable, *KSR International Co. v. Teleflex Inc.* Substitution of one known element for another to yield predictable results would be obvious to one skilled in the art.

6. Claims 13-16 and 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arbab et al., as applied to claims 1 and 11 above, and further in view of Coustet et al.

As stated above, Arbab discloses the same coated substrate as recited in claims 1 and 11.

Arbab does not disclose the lower anti-reflection dielectric layer comprising the layer structure  $\text{Si}_3\text{N}_4/\text{ZnO}$  as recited in claim 13.

Coustet teaches a lower dielectric layer structure of  $\text{Si}_3\text{N}_4/\text{ZnO}$  (page 2, [0029]) for a coated glass substrate. Coustet teaches that it is beneficial for the coatings to comprise both metal oxide layers such as ZnO layer for stabilizing the silver layer and silicon nitride layers for oxygen barrier (page 2, [0023]). The coated article comprising such layered structure is able to undergo a heat treatment of the bending or toughening type without any substantial optical change (page 1, [0005]).

Therefore, it would have been obvious to one of ordinary skill in the art to use the low dielectric layer structure as claimed for Arbab's anti-reflection dielectric layer in order to stabilize the silver layer, provide oxygen barrier, and to maintain the optical properties of the coated glass substrate even after a heat treatment, bending or toughening.



Regarding claims 14-16, Arbab discloses the coated glass is useful for architectural glazing and as vehicle windows to provide high light transmitting and low emissivity to the architecture or vehicle (cols 1-2).

Arbab does not disclose the specific layered structure of the double glazing as recited in claims 14-16.

However, it is well known in the art that the architectural or vehicle windows comprising multiple or double glazing structure. For example, Coustet teaches a multiple or double glazing comprising an inert film between the two glass substrates (page 2, [0030]) and at least one of the glass substrate coated with a low emissivity coating that comprising silver.

Therefore, it would have been obvious to one of ordinary skill in the art to provide Arbab's coated glass substrate in a double glazing structure as claimed in order to make the coated glass substrate suitable for architectural or vehicle windows.

#### ***Allowable Subject Matter***

7. Claim 12 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Response to Arguments***

8. Applicant's arguments filed on 7/21/2009 have been considered but are moot in view of the new ground(s) of rejection.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ling Xu whose telephone number is 571-272-7414. The examiner can normally be reached on 8:00 am- 4:30 pm, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on 571-272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Ling Xu  
Primary Examiner  
Art Unit 1794

/Ling Xu/  
Primary Examiner, Art Unit 1794

Lx  
September 22, 2009

